EXHIBIT 10

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON TALCUM POWDER PRODUCTS MARKETING SALES PRACTICES, AND PRODUCTS LIABILITY LITIGATION) MDL NO.16-2738(FLW)(LHG)

VIDEO-RECORDED DEPOSITION OF

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11:00:43 **A.** No, sir. It's not the type of information
11:00:45 I would typically put in a report.
11:00:47 **Q.** Do you know which set of NIST standards
11:00:53 exist at MAS right now?
11:00:56 **A.** It is the 1875, I think it is. I have to
11:01:02 check the numbers on it. It's the standard NIST
11:01:05 samples that all asbestos labs have or should have.
11:01:09 **Q.** Do you know when you obtained them?
11:01:11 **A.** Not as I sit here today.
11:01:13 **Q.** Did your analyst compare any of the
11:01:15 particles identified in this report by TEM with any
11:01:19 known asbestos reference samples?
11:01:21 **A.** Well, we have analyzed both reference
11:01:30 tremolite series, anthophyllite series. We have all
11:01:33 those reference standards, analytical data on the TEM
11:01:39 walls. I don't think they pulled the reference and
11:01:43 put them in each and every time, but they routinely
11:01:47 check reference samples.
11:01:49 **Q.** Okay. So when you say they check
11:01:51 reference samples, are you saying you mean that they
11:01:53 check to whatever's on your reference wall?
11:01:56 MR. CIRSCH: Object to form.
11:01:57 THE WITNESS: Well, no. The reference
11:01:58 wall is from the reference samples, and we have
11:02:01 analyzed reference samples in the past

11:02:03 specifically for these J&J cases. And the
11:02:08 analysts are well trained.
11:02:10 I don't know how often they need to pull
11:02:12 out a reference sample in order to identify
11:02:14 either the anthophyllite solid solution series
11:02:17 or the tremolite solid solution series.
11:02:21 **Q.** (By Mr. Chachkes) Let's ask two different
11:02:23 lines of questions here.
11:02:24 So you have internal MAS-generated
11:02:27 reference samples for TEM to identify asbestos; is
11:02:30 that correct?
11:02:30 **A.** Yes.
11:02:31 **Q.** Okay. Did you produce them?
11:02:34 MR. CIRSCH: Object to form.
11:02:35 THE WITNESS: I didn't think it was asked.
11:02:37 MR. CHACHKES: Okay. I would ask the
11:02:38 plaintiffs produce that, please.
11:02:40 **Q.** (By Mr. Chachkes) What about reference
11:02:42 samples generated by third parties, do you have
11:02:47 those?
11:02:49 **A.** Reference samples by third parties, you
11:02:51 will have to -- NIST is a third party.
11:02:53 **Q.** Okay. So anything else?
11:02:58 **A.** We have accumulated reference samples now
11:03:01 from anthophyllite asbestos from Windsor County, and

11:03:09 I'd have to look at them and see what the validation
11:03:13 is. We have cummingtonite standards now. We have
11:03:17 grunerite standards. We have -- I believe we have
11:03:21 winchite and richterite standards. We have not
11:03:25 analyzed them yet to the degree where we can put the
11:03:28 results altogether.
11:03:28 **Q.** So are these -- so I'm talking about
11:03:31 reference standards that you can look at those and
11:03:35 compare to what you're generating in this case. So
11:03:39 you're saying that there are third-party
11:03:41 anthophyllite standards that you have that were
11:03:45 produced by something in Windsor County?
11:03:48 MR. CIRSCH: Object to form.
11:03:49 THE WITNESS: It wasn't produced by
11:03:50 Windsor County. It was a mineral house that
11:03:57 sells them. And I have not had an opportunity
11:04:01 to -- we haven't had an opportunity to look at
11:04:03 them yet.
11:04:03 **Q.** (By Mr. Chachkes) That's just the
11:04:05 mineral, though, right, the raw mineral?
11:04:07 MR. CIRSCH: Object to form.
11:04:08 THE WITNESS: Well, it's fibrous, it's raw
11:04:11 mineral anthophyllite, raw mineral
11:04:15 cummingtonite, raw mineral grunerite, raw
11:04:18 mineral winchite-richterite.

11:04:22 **Q.** (By Mr. Chachkes) Okay. For those
11:04:22 minerals that you just mentioned, did you obtain from
11:04:24 a third party a TEM photo of the mineral at issue
11:04:31 that you can use as a standard to compare what you
11:04:34 find under your TEM?
11:04:36 MR. CIRSCH: Object to form.
11:04:38 THE WITNESS: No. Typically people don't
11:04:39 provide that -- or NIST should have -- a TEM lab
11:04:43 that's looking at standards should have the
11:04:46 qualifications and training to be able to
11:04:49 recognize the regulated asbestos types.
11:04:52 **Q.** (By Mr. Chachkes) Okay. So, now, the
11:04:54 only third-party TEM photographs that you could use
11:04:59 as a standard for determining whether what you're
11:05:03 looking at under your TEM is asbestos, the only one
11:05:06 you've mentioned so far is NIST; correct?
11:05:09 **A.** I'm sorry, I misunderstood.
11:05:10 NIST does not provide you TEM pictures or
11:05:12 EDS pictures or PLM pictures or any XRD pictures.
11:05:16 They assume you have the training and capability of
11:05:19 doing that.
11:05:19 I'm not aware of any third-party group
11:05:21 providing photograph standards along with the
11:05:25 samples.
11:05:25 **Q.** Okay. So to sum it all up, you do not

But I would have to review the data to see what they're analyzing, what the chemistry is, how did they identify, and how many asbestos fibers the two that found it versus the one that didn't. So it's --

Q. (By Mr. Chachkes) Okay.

A. -- you just can't say is this a problem, this -- maybe, maybe not.

Q. Okay. So there is a situation you would say there is not a problem where three analysts looking at the same bottle finding -- one found anthophyllite, one found tremolite, one found nothing detectable, there is a situation where that would not be a problem, you can imagine that?

MR. CIRSCH: Object to form.

THE WITNESS: I don't know if I can imagine any of this happening, but it's your hypothetical. Unless I can look at the data and understand what each of the analysts were counting, how many structures, what is the chemistry, what is the diffraction patterns, is it the two analysts found one and one found zero, is this -- you know, what is the mine this is coming from, how does our other data look -- there's a lot involved there than just saying

off the cuff, oh, that's a problem or that's not a problem.

Q. (By Mr. Chachkes) Okay. All right. I've asked you whether you can imagine a situation where that's not a problem. You have not provided that to me. This is -- I'll just ask it one more time. Can you provide that to me? I can imagine that's not a problem.

MR. CIRSCH: Object to form. I think he answered your question.

THE WITNESS: I can't give you any additional information about that because I don't -- as a scientist I just don't like to say, well, this is -- I can imagine a problem here, I can't imagine it's a problem, without looking at any data to see how many asbestos fibers each of the analysts counted, is it one, is it ten, is it five, what's the chemistry look like, the EDXA, the SAED. I would have to review it to see if it's a problem or not.

Q. (By Mr. Chachkes) Is there sufficient subjectivity in the system such that it could be correct that one analyst could find in a bottle tremolite and another analyst could find in the bottle anthophyllite?

MR. CIRSCH: Object to form.

THE WITNESS: I don't think it's subjectivity. I just think it's wherever the cosmetic talc source was in any particular mine, what's there. We have many samples that have both types of asbestos in it.

So you can't say, well, you found this and the other one found that, when the source, the accessory -- amphibole asbestos accessory mineral in these mines have both types.

Q. (By Mr. Chachkes) If one of your scientists looked at a J&J bottle of talc and found a particular concentration of a particular kind of asbestos, would you -- do you believe to within a scientific -- a degree of scientific -- reasonable scientific degree of certainty that a second scientist following proper procedures would find the same?

MR. CIRSCH: Object to form.

THE WITNESS: I think we already talked about this. I would never expect a second scientist or a second analyst going in with a separate prep sample finding the exact amount. And again, it depends on how many is there.

We did discuss this once. If it's one or

two and the second analyst found none, that's in the margin of error, or it's looking for the needle in the haystack sort of analogy.

If one analyst found 50 and the other found zero, yes, that's a problem, like we already discussed. Again, I would have to look at the data to determine if it's a problem or not.

Q. (By Mr. Chachkes) Do you believe it's appropriate, given this margin of error, to run multiple tests on a single bottle and then average the results to get what would be the correct answer?

MR. CIRSCH: Object to form.

THE WITNESS: I don't think that's necessary. I think the -- we can accept what the analysis is. It comes from a sample in a bottle. The more you run, you may go from nondetect initially to detect in the second or third. But I don't think that is necessary to do for the types of analysis we're doing.

Q. (By Mr. Chachkes) For two of your analysts analyzing the same bottle, what degree of difference in the detected percentage of fibers versus detected percentage of bundles would you expect normally?

MR. CIRSCH: Object to form.

THE WITNESS: I don't have any expectations. The analyst is ultimately making the decision if it is a single fiber or a bundle. Because he's looking in the microscope, he's the one who can -- you're looking through the fiber, he's the one doing the -- he can change the focal plane, he can change from dark field to bright field, so ultimately he's making the decision on it.

Q. (By Mr. Chachkes) I am asking really what is the margin of error in detecting fiber versus bundle percentage, acceptable margin of error. Have you ever figured that out?

A. We haven't done that; it's really not necessary. It's more important for coefficients of variation. I've reviewed all the photographs of fibers and bundles. I would say 95, 98 percent of them I agree with. There's a couple percent in there that you have to leave it up to the analyst to make that decision.

Q. Would you expect an analyst in your lab and an analyst in Lee Poye's lab to get the same results for a particular bottle? Is it the same answer as I've been getting with two analysts in your

lab?

MR. CIRSCH: Object to form.

THE WITNESS: Yes. I would expect, depending on what the count is or how many fibers, if it's not in the margin of error, that we would verify that it's same bottle as positive. But other than that, I would have to see the data to see.

Q. (By Mr. Chachkes) When you say -- when you say it's not within the margin of error, what's the quantification of that margin of error?

A. I think our analysts have a margin of error on coefficient of variation somewhere in the 6 to 7 percent range. So one lab finding one fiber or maybe two fibers, another lab finding zero or finding four, I don't have any issue with that.

Q. Would you expect the samples, the various bottles from a single mine, like all the bottles from J&J talc from Vermont, cosmetic talc from the Vermont mine, to have roughly the same EDS spectra?

MR. CIRSCH: Object to form.

THE WITNESS: Depending on the type of asbestos, yes.

Q. (By Mr. Chachkes) Okay. By the way, I've seen EDXA; I've seen EDS. Do you use those

synonymously in your report?

A. I think all ours say EDXA. EDS is old school. They're both the same technique: energy dispersive spectroscopy or energy dispersive x-ray spectroscopy.

Q. Do you expect all the samples from a single mine, for example, the cosmetic talc from J&J's Vermont mine, to have similar SAED patterns?

A. Depending on the orientation of the crystal and depending on what the material is.

Tremolite, winchite, richterite, actinolite typically have similar, but the anthophyllite solid solution series, especially from Vermont where you can have no iron, iron-rich, cummingtonite, high-iron cummingtonite, and actually going to grunerite, those will have different reflections because you're going from orthorhombic to monoclinic.

Q. So would you expect all the samples from a single mine to have the same concentration of asbestos?

A. No.

Q. Why not?

A. Because you're dealing with accessory minerals. It just depends on where it's being dug

out of the mine.

Q. Would you expect all the samples from a single mine to have the same fiber versus bundle ratio?

A. Not necessarily. All these materials are milled, and you're dealing with an asbestos type tremolite-anthophyllite that's brittle. So I don't know if I would expect to see the same bundles to fibers.

And of course you're also dealing with the microscopist who has to make that final decision, the TEM microscopist, if it's a single fiber or bundle.

What we try to make sure happens is that every asbestos fiber or bundle we identify meets the counting criteria for a regulated asbestos fiber or bundle as per the TEM methods, both ISO, ASTM. That's the most important thing.

And then we try to also get some consistency on whether it's bundles or fibers. But that's what we strive for, is following the protocol, following the standard counting rules, and identification.

Q. Hypothetically, if one of your researchers analyzed 150 different samples from a single mine and another researcher analyzed those same 150 samples,

MR. CIRSCH: Object to form.

THE WITNESS: I doubt he's looking at when he takes a spectra of either tremolite series or anthophyllite series that he's turning over and looking at a known reference. These analysts have been doing this for years and years and years.

We have references, but I can't imagine every time he takes an EDX spectra that looks the same time after time after time that he's looking at a third-party reference at that particular point in time.

Q. (By Mr. Chachkes) Okay. How many different analysts do you have doing EDXA spectra?

A. Four.

Q. Does NIST have an EDXA reference spectra for the various asbestos?

MR. CIRSCH: Object to form.

THE WITNESS: I think you already asked that. And besides not having a -- providing a TEM photo, they do not provide an actual spectra. But I think most -- I think there's a number of third-party references I believe just give you the ratios of what you would see in EDXA for the magnesium, the silicon, the

calcium, potentially some iron, tremolite, or actinolite.

Q. (By Mr. Chachkes) Why is EDXA useful?

A. Provides the inorganic, and depending on your detector, organic chemistry of any particular elongated particulate.

Q. When you look at an EDXA spectra, do you assume it's a regulated particle and then look to which regulated particles have the metal-to-silicon ratio that correspond?

MR. CIRSCH: Object to form.

THE WITNESS: Well, we typically don't do an EDX spectra unless it meets the definition of a regulated -- it has the potential for a regulated asbestos fiber or bundle.

So it's got to be at least .5 micrometers in length or greater, it's got to have an equal to -- greater than or equal to 5-to-1 aspect ratio, and parallel sides. Then the analyst -- first thing I would assume is do EDXA and check the chemistry. And then SAED.

Q. (By Mr. Chachkes) If your analyst sees something that's, what did you say, greater than .55 millimeters?

A. Microns.

Q. Microns, I'm sorry.

A. Micrometers.

Q. Okay. So strike that.

If your analyst sees something that's greater than .5 micrometers and has an aspect ratio of at least 5-to-1, then he might do EDXA?

A. If it has parallel sides, yes. And he may do SAED. It doesn't matter which one. But then he would have to go through the sequence of determining if it meets the definition for the regulated asbestos chemistry and the crystalline structure.

Q. Are there minerals that exist in the world other than regulated particles, regulated asbestos particles, that are greater than .5 micrometers and can have an aspect ratio of greater than 5-to-1?

MR. CIRSCH: Object to form.

Q. (By Mr. Chachkes) And with parallel sides?

A. Yes.

Q. Potentially dozens if not hundreds; right?

A. I haven't counted them all up. But what we potentially see is asbestiform talc bundles or fibers all the time. So, yeah, you have to distinguish between a talc fiber or bundle and an anthophyllite fiber or bundle.

Q. The question really is about minerals, so let's focus on what I've just asked, which is: There are potentially dozens if not hundreds of minerals that can have parallel sides, that can have -- be bigger than .5 micrometers, and have aspect ratios that are 5-to-1 or greater?

MR. CIRSCH: Object to form.

THE WITNESS: And I apologize, but I just stated I haven't counted them up. And really, we're not interested in the hundreds or whatever it is around the world.

It's primarily what do we find in the talc deposits that are asbestiform or fibrous and meet those definitions. And typically the only thing we routinely see is fibrous talc. Every now and then an antigorite fiber may show up.

But I don't -- to answer your question you asked, I haven't counted how many are out there.

Q. (By Mr. Chachkes) Does MAS conduct qualitative EDS analysis or quantitative EDS analysis?

A. I believe every spectra in here is quantitative EDS analysis.

Q. So you actually calculate the peak sizes and do the math?

13:40:12 a graduate school?
13:40:14 **A.** Not in this type of work, no.
13:40:16 **Q.** Okay. In what type of work?
13:40:19 **A.** Well, I was visiting assistant professor, so it would have been materials science.
13:40:23 **Q.** Okay. Nothing to do with detecting asbestos?
13:40:25 **A.** No.
13:40:25 **Q.** Do you know McCrone's Particle Atlas?
13:40:28 **A.** Yes.
13:40:28 **Q.** And that's something folks other than McCrone use as a standard in this field?
13:40:31 **A.** Yes.
13:40:36 **Q.** Have you ever published anything that other people outside of your lab use as a standard?
13:40:39 MR. CIRSCH: Object to form.
13:40:43 THE WITNESS: Not in a book, no.
13:40:45 **Q.** (By Mr. Chachkes) What about otherwise?
13:40:47 **A.** Yes, if you go to Federal Mogul's and search for wollastonite detection, one of our protocols was published by them for the determination
13:40:50 of tremolite asbestos in wollastonite for Federal
13:40:54 Mogul involving their manufacture of OEM brakes.
13:40:58 **Q.** What is Federal Mogul? I'm not familiar
13:41:02 with that.

13:41:12 **A.** It's a company that owns a bunch of companies.
13:41:14 **Q.** Okay. So you published -- I'm sorry, say it again. What does it stand for?
13:41:14 **A.** Well, I didn't publish it. We wrote a protocol for determining a problem they were having
13:41:20 with the supplier of a mineral called wollastonite,
13:41:22 which is a substitute fibrous material, and the
13:41:25 particular source that they were using stated that it
13:41:29 had a small amount of tremolite contamination in it.
13:41:29 **Q.** Okay. Did you ever published a standard for finding asbestos that was for the general
13:41:31 scientific community, not for just one specific
13:41:36 client?
13:41:38 MR. CIRSCH: Object to form.
13:41:40 THE WITNESS: I was in charge of the ASTM and the D2205 committee for the analysis of --
13:41:44 number count analysis of asbestos in settled
13:41:49 dust. It's the D5755, I believe it is.
13:41:49 **Q.** (By Mr. Chachkes) Okay. And that has your name on it?
13:41:50 **A.** No. ASTM standards have ASTM on it.
13:41:52 **Q.** Okay. And that was -- that standard --
13:41:57 the contributors were many more people than you;
13:42:01 right?

13:42:05 **A.** Yes. Some people contributed, but I was
13:42:08 in charge of -- it was our method that we had given
13:42:09 to the EPA. Then it was fighting over the
13:42:22 definitions.
13:42:25 **Q.** Have you or MAS published any standard for finding asbestos in any material or any mineral or
13:42:30 anywhere that is attributable exclusively to you or
13:42:31 MAS?
13:42:35 **A.** No.
13:42:39 **Q.** Have you published a methodology for finding asbestos in talc?
13:42:43 **A.** Have not.
13:42:43 **Q.** You're aware that McCrone has done that;
13:42:44 right?
13:42:55 MR. CIRSCH: Object to form.
13:42:57 THE WITNESS: Jim Millette, yes, I'm aware, 1990 and 2015, I believe, are the two
13:42:59 papers in Microscopy.
13:43:01 **Q.** (By Mr. Chachkes) You're aware that McCrone has testing and training classes related to
13:43:01 finding asbestos; correct?
13:43:02 MR. CIRSCH: Object to form.
13:43:05 THE WITNESS: They teach a -- used to, anyway, the McCrone Institute. May still do it.
13:43:09 **Q.** (By Mr. Chachkes) Have you ever taught or
13:43:10
13:43:11
13:43:14
13:43:15
13:43:16
13:43:19
13:43:25

13:43:30 trained -- sponsored teaching or training classes for
13:43:34 finding asbestos for people outside of MAS?
13:43:36 **A.** I've given a couple lectures and taught an
13:43:39 all-day two-day seminar at the American Industrial
13:43:44 Hygiene Association to help train, to give certified
13:43:48 industrial hygienists or industrial hygienists how to
13:43:51 perform TEM analysis for asbestos.
13:43:54 **Q.** Okay. Other than that, any?
13:43:57 **A.** At Georgia Tech in their continuing
13:44:00 education program involving asbestos, seminar up at
13:44:08 Southern University of New York, I have taught there
13:44:13 for a week. Again, it was TEM analysis for asbestos.
13:44:19 **Q.** Okay. Was it for finding talc, asbestos in talc?
13:44:24 **A.** No, it was just general finding asbestos
13:44:25 in whatever you wanted to look in.
13:44:28 **Q.** Have you or MAS given any training or classes relating to finding asbestos in talc?
13:44:30 **A.** No.
13:44:36 **Q.** Has any School of Public Health asked you to assist them in finding asbestos in talc?
13:44:39 **A.** No.
13:44:39 **Q.** You're aware that a number of governmental
13:44:43 bodies are out there, not just in the U.S. but
13:44:46 elsewhere, looking into the question of whether
13:44:47
13:44:51
13:44:54

13:44:58 asbestos is in cosmetic talc; correct?
13:45:01 MR. CIRSCH: Object to form.
13:45:02 THE WITNESS: I'm aware of Canada and
13:45:06 maybe India, maybe. I've seen some articles.
13:45:07 **Q.** (By Mr. Chachkes) Okay. Have any of
13:45:07 those -- any governmental body, U.S. or otherwise,
13:45:10 asked you to assist in determining whether cosmetic
13:45:13 talc has asbestos?
13:45:15 MR. CIRSCH: Object to form.
13:45:16 THE WITNESS: No.
13:45:18 **Q.** (By Mr. Chachkes) Has any federal court
13:45:20 ever said that your methodology for finding talc
13:45:23 in -- asbestos in talc passes Daubert standards?
13:45:30 **A.** I'm not sure I've had a Daubert standard
13:45:32 in federal court yet. As for state court, I think
13:45:36 there's been seven, six or seven challenges.
13:45:39 **Q.** So my question is about federal court.
13:45:41 Has any federal court certified you under Daubert
13:45:43 standards for finding asbestos in talc?
13:45:45 MR. CIRSCH: Object to form.
13:45:46 THE WITNESS: As I just stated, I don't
13:45:48 believe I've been in federal court yet other
13:45:50 than this one for -- where any Daubert
13:45:56 challenges would arise.
13:45:57 **Q.** (By Mr. Chachkes) Has your methodology

13:45:59 for finding asbestos in talc ever been published in a
13:46:04 peer-review journal or literature otherwise?
13:46:05 MR. CIRSCH: Object to form.
13:46:06 THE WITNESS: Well, it's not my method,
13:46:08 and the Blount method by PLM has been published
13:46:13 and the ISO 22262-2 is an international
13:46:16 standard. So it's not my method; it's standard
13:46:20 protocols for doing the method.
13:46:21 **Q.** (By Mr. Chachkes) Is all your analysis
13:46:23 for -- all your analysis of cosmetic talc for
13:46:27 asbestos been for and sponsored by plaintiffs'
13:46:30 lawyers?
13:46:31 **A.** Yes.
13:46:31 **Q.** You mentioned the NVLA. What is that?
13:46:36 **A.** National Voluntary Laboratory
13:46:41 Accreditation Program for the determination of
13:46:42 asbestos in air samples by TEM and bulk analysis.
13:46:47 **Q.** Does the NVLA have an accreditation for
13:46:52 finding asbestos in talc?
13:46:54 **A.** It's hard to say because they don't really
13:47:01 dictate what the matrix is.
13:47:04 **Q.** When you say matrix, what do you mean by
13:47:06 that?
13:47:06 **A.** Well, it's just asbestos in materials.
13:47:09 I'm not sure they have a specific one for talc or a

13:47:13 specific one for joint compound or a specific one for
13:47:17 thermal insulation. It's just a matter of being able
13:47:23 to determine and detect and to record what is
13:47:27 present.
13:47:28 **Q.** Okay. Does the NVLA have an accreditation
13:47:33 standard for finding talc in something other than
13:47:36 air, like in -- I'm sorry, strike that.
13:47:37 Does the NVLA have an accreditation
13:47:41 standard for finding asbestos in something other than
13:47:43 air, like in talc?
13:47:44 MR. CIRSCH: Object to form.
13:47:45 THE WITNESS: Well, they accredited to the
13:47:48 EPA 600/R-93 PLM method. That's not specific
13:47:53 for talc. It's building materials.
13:47:56 **Q.** (By Mr. Chachkes) And do they accredit
13:47:58 you for methodology or something else?
13:48:01 **A.** To be able to perform the analysis.
13:48:04 **Q.** Meaning what?
13:48:06 **A.** Meaning if you -- we have round-robins
13:48:10 that you can adequately identify products that have a
13:48:14 certain concentration of asbestos in it that you
13:48:16 would routinely see for building products.
13:48:18 **Q.** Has NVLA ever accredited you specifically
13:48:21 for finding talc in asbestos?
13:48:24 **A.** I think, as I've already stated, they

13:48:26 don't have a previous matrix, meaning what is the
13:48:29 asbestos in. They go by the EPA 600/R-93 method for
13:48:36 analysis of bulk samples, typically building material
13:48:40 bulk samples for asbestos.
13:48:41 **Q.** So the NVLA, did they actually have
13:48:44 someone come to your lab and do this accreditation?
13:48:46 **A.** Yes.
13:48:46 **Q.** Okay. When that person came to your lab
13:48:47 for the accreditation, did they ask to see your
13:48:51 techniques and methodologies for finding asbestos in
13:48:53 talc?
13:48:54 MR. CIRSCH: Object to form.
13:48:55 THE WITNESS: Again, they don't say talc
13:48:57 and they don't say any particular thing. It's
13:48:58 just your overall methodology for performing the
13:49:01 analysis. And usually the auditor will bring
13:49:07 samples and have the analyst be able to
13:49:10 determine the type and the estimated weight
13:49:14 percent of what's in the sample.
13:49:15 **Q.** (By Mr. Chachkes) Okay. So the samples
13:49:18 that the NVLA brought for you to analyze for your
13:49:22 accreditation were not talc samples; correct?
13:49:25 **A.** I don't believe so, no.
13:49:25 **Q.** They were just straight-up samples of
13:49:28 different kinds of asbestos; right?

photomicrograph -- it's close -- to make sure.

Q. (By Mr. Chachkes) So you use visual inspection through the TEM to determine morphology?

MR. CIRSCH: Object to form.

THE WITNESS: With the counting rules, that is correct.

Q. (By Mr. Chachkes) Okay. Well, it doesn't matter what the counting rules are. If you want to look at -- if you want to just see the morphology, you use visual inspection?

MR. CIRSCH: Object to form.

THE WITNESS: The first thing we do is look at it and if it has parallel sides and does it meet the counting rules where this is an elongated particle, that deserves further examination.

Q. (By Mr. Chachkes) Can you tell me where in ISO 22262 it provides -- directs you to look at morphology under TEM?

A. I did. I gave you the ISO standard for TEM and indirect prep, and in order to determine what your weight percent is, you have to determine if it is parallel sides, greater than .5 micrometers in length, and so on and so forth.

Not all methods replicate previous

methods. ISO 22262-2 does not put the entire counting protocol in there. It directs you to the TEM method where you have all these methodology to do that.

Q. Okay. So it's not, per se, in 22262, but you're saying there's a reference to another ISO standard which you say requires visual inspection under TEM to determine morphology?

MR. CIRSCH: Object to form.

THE WITNESS: Well, per se it doesn't replicate the entire procedure. That's how these standards work.

Once it has a document, in this case, another ISO document that lays out all the procedures and practices for how to identify regulated asbestos, it just goes back to that.

Q. (By Mr. Chachkes) So --

A. ASTM is the same way, and the definition of asbestos fibers in ASTM has another document that tells you all the different definitions. One builds on the other.

Q. Okay. Just looking at 22262, there is a section in there under part 1 that is labeled Morphology; right?

Exhibit 4 is the one that's part 1?

A. Oh, part 1, I'm sorry.

Q. Yeah. I'll just direct your attention to 7.2. -- on page 22.

So there's a section on page 22 which has the heading Morphology; correct?

A. That is correct. 7.2.3.7.1. I'm surprised you didn't know that.

Q. I did, actually.

And the only heading, as far as you know, in the ISO 22262 parts that actually says morphology is this one? Or do you not know? I don't want to spend all day on that one.

MR. CIRSCH: Form.

THE WITNESS: Well, this is a PLM analysis. This is not TEM analysis. And ISO has their PLM analysis setup, and these are the counting rules of what you do when you're analyzing under a polarized light microscope versus a transmission electron microscope.

Q. (By Mr. Chachkes) Did you use PLM to identify the morphology of the fibers you found in the MDL?

MR. CIRSCH: Object to form.

THE WITNESS: Well, that's worded -- and I apologize. That's worded poorly.

For our ISO 22262-1 PLM analysis, yes. We went through, and each of these regulated asbestos fibers that we have in there in pictures follow this morphology.

Q. (By Mr. Chachkes) Okay. In your reports you write on page 12, Amphibole fibers or bundles with substantially parallel sides and an aspect ratio of 5-to-1 or greater and at least half a micrometer in length were counted as regulated asbestos fibers and bundles per the standard TEM counting rules described by -- and then you cite six methods. Are you with me so far?

A. I am.

Q. Which is the method you actually use?

A. Well, can't really point to any one method because they all have the same counting rules.

Q. Okay.

A. What page was that?

Q. I was just talking about page 12 of your January 15.

A. I think it states that.

This is for, again, TEM. And every one of those TEM methods have those counting rules, so I referenced them all.

MR. CHACHKES: So I'm going to mark as the

next exhibit ISO 13794. We are on Exhibit 21.

(Defendants' Exhibit 21 was marked for identification.)

Q. (By Mr. Chachkes) So we spoke a little bit before about what's been marked as Exhibit 21; right?

A. Yes, sir, we have.

Q. Okay. And going to the seventh page in section 1, Scope. Section -- we're here.

A. What page? 7? Did you say 7?

Q. Actually, strike that.

I'm sorry. So it was the seventh page of the PDF, so let's strike that and start again.

Going to what's numbered in the exhibit as page 1, going to the heading 1, this is Scope; right? It's the scope of the ISO standard?

A. Correct.

Q. Okay. Subsection 1.1, which is substance determined; do you see that?

A. I do.

Q. And then you see at the last sentence, The method cannot discriminate between individual fibers of asbestos and nonasbestos analogs of the same amphibole mineral.

Do you see that?

A. I do.

Q. Do you agree with ISO 13794 that this method cannot discriminate between individual fibers of the asbestos and nonasbestos analogs of the same amphibole material?

A. Yes and no. If you're analyzing samples over and over from the same source and you're seeing both what people will clearly say is asbestiform bundles and you have some individual fibers in there, in my opinion you can discriminate against that.

If I was looking at one fiber and I didn't have any information about it and hadn't analyzed sample after sample, I would say that one fiber, it's asbestos, it's asbestiform because it's formed like asbestos, but, no, it does not meet the geological definition for asbestos, high tensile strength, flexible, and so on and so forth.

But to me, asbestiform means that it is fibrous like asbestos; I would call it asbestiform.

Q. So it's your understanding when -- in this exhibit, in this ISO standard, when it says it can't discriminate between asbestos and nonasbestos analogs, it's referring to geological definitions and not regulatory definitions; is that your testimony?

MR. CIRSCH: Object to form.

THE WITNESS: Well, it is regulatory. If it -- even though it cannot discriminate, you have to count it, and it is a regulated asbestos fiber if you decide it's asbestiform or not. It does not allow you to discriminate between the two as long as it meets the counting rules. It is regulated.

Q. (By Mr. Chachkes) Okay.

A. Now, we can argue over back and forth if it is asbestiform or not. But make no mistake, it is a regulated asbestos fiber if it meets the counting rules.

Q. Okay. So you're saying that something can meet the counting rules, be regulated, but it might be the non -- you might be counting nonasbestos analogs?

MR. CIRSCH: Object to form.

THE WITNESS: It's not nonasbestos.

It's --

Q. (By Mr. Chachkes) I'm using the phrase in --

A. It is not nonasbestos. If it meets all the counting rules, it's a regulated asbestos fiber. That's my position on that.

Q. Okay. In this last sentence of 1.1, it

makes a distinction between asbestos and nonasbestos analogs; do you see that?

A. I see that.

Q. That's black and white; right?

MR. CIRSCH: Object.

THE WITNESS: That's what it states.

Q. (By Mr. Chachkes) Okay. So tell me what asbestos versus nonasbestos analogs mean in ISO 13794.

MR. CIRSCH: Object to form.

THE WITNESS: They don't really define it other than to say it may not.

In my opinion, if it is fibrous, asbestiform, fibrous like asbestos-form, it is asbestiform.

Q. (By Mr. Chachkes) Yeah, but what I want is can you make any -- reading -- looking at that sentence, there's a clear distinction between asbestos and nonasbestos analogs. What's the difference?

It doesn't matter what you think. What is the ISO -- what distinction are they making? Or you just can't say?

MR. CIRSCH: Object to form.

THE WITNESS: It's not that they don't

think that's not -- because the aspect ratio obviously is greater than 5-to-1; right?

A. Well, I would take a look at it and see parallel sides, is that multiple fibers. I don't know what magnification this is at.

So again, I would prefer to be looking at something under a TEM than just play guess-what-this-is.

Q. Okay. So it's possible what you're looking at there which has an aspect ratio of -- it's greater than 5-to-1; right?

A. That's correct.

Q. Okay. It's possible that that's not -- that's nonasbestiform if it doesn't have parallel sides; is that true?

A. Again, this is an optical microscopy picture. So unless I was looking at this under the TEM, but certainly has parallel sides. I don't know the width. I can't really make out the micron bar, I don't know the magnification.

So you'll have to get some other expert to take a look at it, if he's willing to opine what that is versus the counting rules in the TEM.

Q. In the second row, assuming that everything in the second row is amphibole, would you

call those asbestiform or not?

A. Again, I'm looking at an optical microscopy picture. We've got a bundle that -- I mean, I can't look at the micron bar. Possibly just the one in the middle because you can see individual fibrils.

Q. Okay. If you saw that under your TEM, would you label that as asbestos?

A. Well, I'm not looking at it under TEM. So if it's under an optical microscopy method and it meets the definition, it's got parallel sides, it looks like it has multiple fibers in the bundle, that by definition is asbestiform.

Q. And why do you say it looks like it has multiple fibers in the bundle?

A. Because I can see them.

Q. Okay. You're referring to the lines that go from the northwest towards the southeast starting in the top?

A. Yes, sir.

Q. Okay. In the third row, assuming those are amphiboles, do you have enough information to determine whether they're asbestiform?

A. I can't really see what we have here under these. And I'm assuming the fourth and five row --

Q. Well, let's not get ahead of ourselves.

Now, in the third row, do you have enough information from these pictures to see whether they're bundles or fibers?

A. No. It's too out of focus.

Q. Okay.

A. I would -- looks like you have dark field here. I would have to see this in the TEM.

Q. Okay. In the second row, far left, do you have enough -- does it appear to you whether there are bundles or fibers?

A. No, you can't make out. Most of these are just particles. And I would have to be looking at this one that has parallel sides. But I would have to be determining if I could see individual fibers in it or not.

Q. In the fourth row, second from the bottom, are these asbestiform?

A. Maybe.

Q. What additional information would you need to determine that?

A. I need to be looking at it in the TEM or -- so that I can make a determination. The size, the magnification.

Q. Do you have enough information in the

second -- in that second-to-last row, those three pictures, to determine whether that's asbestiform?

A. I wouldn't make that call either way unless I could be looking at it under the TEM. It looks like very little magnification. And I apologize, but they're fairly poor photographs.

Q. Okay. In the last row, same question. In those three pictures at the very bottom of Exhibit 22, are those -- see the single fibers -- the single item in the middle, would you call that asbestiform?

A. It has parallel sides. I can't see individual fibers. But I would call that a regulated asbestos fiber or bundle, maybe.

Again, I would need to be looking at the TEM analysis of these or at least better photographs.

Q. Okay. So the bottom six are all TEM photomicrographs from you? You realize that; right?

MR. CIRSCH: Object to form.

THE WITNESS: And that's fine. If you tell me which ones they are, at least I can get better images.

Q. (By Mr. Chachkes) These are the images you provided to us; right?

A. Well, when we provide the book, we provide

17:36:17 THE WITNESS: I don't have any expectation
17:36:19 of what we're going to find or what we expect.
17:36:21 We just count using the protocols and make the
17:36:25 decision on what morphology it is.
17:36:27 **Q.** (By Mr. Chachkes) Okay. Have you
17:36:28 testified that the modified Blount TEM method you
17:36:31 employed in your March 2018 report is materially
17:36:35 identical to the ISO 22262?
17:36:37 **A.** I don't think I -- it's not identical.
17:36:43 The old Blount report uses a different heavy density
17:36:47 liquid separation. But the ISO, we can use the same
17:36:52 spin rate, same time for rpm and spin rate.
17:36:59 But the difference is the -- even the old
17:37:03 Blount is the same. And that's -- what's interesting
17:37:06 about the ISO 22262-2, it gives you the leeway to use
17:37:11 whatever you need to use. And the only thing it
17:37:16 really specifies is the density of the heavy liquid.
17:37:21 **Q.** You used the Blount TEM method in your
17:37:23 March 2018 report; correct?
17:37:24 **A.** Correct.
17:37:24 **Q.** Was it materially identical to what's
17:37:28 mandated in ISO 22262?
17:37:32 **A.** ISO 22262 doesn't mandate any particular
17:37:35 conditions. So you can use whatever procedures you
17:37:41 feel work the best. And that's because the spin

17:37:45 rates and rpm does not really affect the overall
17:37:48 concentrations, and it happened to be the same
17:37:51 density, liquid density.
17:37:53 **Q.** You've testified that the same four
17:37:56 associates at MAS have conducted all of MAS's
17:37:58 analysis of Johnson's Baby Powder in your reports
17:38:01 going all the way back to 2017; is that correct?
17:38:03 MR. CIRSCH: Object to form.
17:38:04 THE WITNESS: We have some of the same
17:38:08 people, yes.
17:38:09 **Q.** (By Mr. Chachkes) Okay. What about are
17:38:11 they the same? Is it the same people who were
17:38:13 doing -- analyzing Johnson Baby Powder in early 2017
17:38:19 as are doing it now?
17:38:22 **A.** You'll have to clarify that question.
17:38:25 **Q.** Well, there were four people doing
17:38:28 analysis in the MDL report; right?
17:38:30 **A.** Correct.
17:38:30 **Q.** There are four people doing analysis in
17:38:33 the reports that rely on research all the way back
17:38:39 to -- analysis all the way back to 2017; correct?
17:38:42 **A.** I'd have to look at that.
17:38:43 **Q.** Okay. I'm asking is it the same four
17:38:46 people? You don't know?
17:38:48 MR. CIRSCH: Object to the form.

17:38:49 THE WITNESS: I'd have to look and see who
17:38:50 the four people are because there are some folks
17:38:53 who started doing, you know, analysis now may
17:38:57 not have been doing analysis then, and there's
17:38:59 some folks doing analysis then that are not
17:39:02 doing analysis now. It's just easy to look in
17:39:05 the count sheets and see if they're the same or
17:39:08 not.
17:39:08 **Q.** (By Mr. Chachkes) Is there additional
17:39:12 data concerning the samples upon which you reported
17:39:15 for TEM that is in a file somewhere in your
17:39:20 laboratory but not printed out and not produced?
17:39:22 **A.** All the data for these particular samples
17:39:25 are here.
17:39:25 **Q.** Okay. Was there any data generated in
17:39:28 connection with the TEM analysis in this case that
17:39:30 was thrown away or deleted?
17:39:32 **A.** No, not that I'm aware of.
17:39:34 **Q.** You personally have not conducted any of
17:39:37 the PLM testing included in your MDL report; correct?
17:39:40 **A.** That is correct.
17:39:40 **Q.** Did you sit with your analysts as they did
17:39:42 the PLM testing?
17:39:45 **A.** I have probably looked in that optical
17:39:47 microscope 50 times in the last two months.

17:39:50 **Q.** So when you say you've looked in it,
17:39:52 you've looked in it while your analysts were testing
17:39:58 MDL samples for the purposes of your current report?
17:40:00 **A.** Well, you can't -- both of you can't look
17:40:02 in the microscope at the same time. A lot of times
17:40:05 it's on the monitor that we use so that we can
17:40:09 increase the sensitivity. But, no, I don't
17:40:12 personally do the PLM analysis.
17:40:14 **Q.** Yeah, but I'm trying to get the sense of
17:40:16 were you actively involved looking through the
17:40:20 microscope or looking along with the other person
17:40:23 into the microscope for the PLM that's reported on in
17:40:25 the MDL?
17:40:27 **A.** I have been active with the PLM
17:40:29 microscopists looking at structures, looking at
17:40:34 different aspects of it, but ultimately he makes the
17:40:38 decision.
17:40:38 **Q.** Okay. So the decisions -- the opinions in
17:40:43 your report about whether the PLM was a positive for
17:40:46 asbestos, those are the opinions of your analysts?
17:40:50 **A.** It's not an opinion.
17:40:51 MS. O'DELL: Form.
17:40:52 THE WITNESS: It meets the definition. It
17:40:54 has the right crystalline information. It meets
17:40:58 all the different definitions. To me, that is

not an opinion.

Q. (By Mr. Chachkes) Okay. Those are the conclusions of your analysts?

A. Yes.

Q. Okay. You have personally never tested a talc sample for asbestos from start to finish yourself?

A. That is correct.

Q. You're not trained in using PLM for the purposes of testing talc for asbestos?

MR. CIRSCH: Object to form.

THE WITNESS: I have not taken a PLM course for asbestos.

Q. (By Mr. Chachkes) You've not published any PLM methodologies?

A. No, sir. We're not using our methodologies. We're using the standard protocol methodologies. So if we were to publish -- when we publish this, we would be publishing that this is the method we used. That's like everybody else.

Q. Have you published any PLM work testing for asbestos in any context?

A. Yes.

Q. What is it?

A. Our gasket study, our vermiculite studies,

our -- that have been published. A number of papers are published where it's going to be a study on exposure. You usually have to determine what the concentration of asbestos is in the materials before you publish that.

Q. Those are published in peer-reviewed literature?

A. Yes, sir.

Q. Okay. But those are not finding asbestos in talc; right?

A. No, sir. These are all construction products.

Q. Are you an expert in PLM?

A. I think I know more than the average layperson.

Q. Are you an expert in PLM?

MR. CIRSCH: Object to form.

THE WITNESS: Again, that's up to a judge to be an expert.

I know how the analysis is done, I could do an analysis if I -- it would take me a lot longer than what people typically do.

Q. (By Mr. Chachkes) One of the disadvantages of PLM that you cite is that it cannot resolve particles less than 1/2 micrometer; is that

correct?

A. Individual fibers, unless they have a number of fibers in a bundle. But we don't see individual fibers. In fact, we haven't seen any individual fiber in any of these analyses that we've done. They've all been very large bundles.

Q. Is it unambiguously true that asbestos particles must be at least 1/2 micrometer in the smallest dimension to be visible under PLM?

A. That's what's stated. We never see individual fibers of any size. Everything that we have run across is these very large bundles that have multiple fibers in them.

Q. But I'm talking about not what you're actually seeing, but this is a matter of the resolution.

Must asbestos particles be at least 1/2 micrometer in the smallest dimension to be visible under PLM?

A. It may be visible, but it's hard to go through the dispersion staining and everything associated to make a positive identification.

So maybe theoretically that's possible, but it's not something that's routinely seen, that I know of.

Q. Do you have the ability to detect asbestos fibers with a width of approximately .3 micrometers by PLM?

A. Again, it may be theoretically possible, but I'm not aware that it's routinely done. We've never seen any in the cosmetic talc.

Q. Shouldn't the particle distribution be on a bell curve so that you would expect that some exist?

MR. CIRSCH: Object to form.

THE WITNESS: I'm sure there is -- it is in there because a lot of these we have positive TEMs. But these two techniques have different size distributions that they can see or they can resolve or not resolve to be able to absolutely determine if it is regulated asbestos or not.

Q. (By Mr. Chachkes) Is it your position that particles below 1/2 micrometer are not resolvable because your analysts have never observed particles of that width or smaller?

A. It's my position that these are fibers, and single fibers are not being resolved in this matrix or seen by the PLM.

Q. Is that because your analysts haven't observed it, or is it just because of the nature of

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